DOCUMENT RESUME

ED 318 609 SE 051 356

AUTHOR de Sairigne, Catherine
TITLE Animals in Winter. Young Discovery Library Series.
REPORT NO ISBN-0-944589-05-7
PUB DATE 88
NOTE 41p.; Contains colored pictures which may not reproduce well. For other titles in this series see SE 051 357-368.
AVAILABLE FROM Young Discovery Library, P.O. Box 229, Ossining, NY 10562 ($4.95).
PUB TYPE Books (010)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Animal Behavior; Animals; Biological Sciences; *Childrens Literature; Elementary Education; *Elementary School Science; *Reading Materials; *Science Activities; *Science Materials; Scientific Concepts; Wildlife

ABSTRACT

This book is written for children 5 through 10. Part of a series designed to develop their curiosity, fascinate them and educate them, this volume introduces the habits of a variety of animals during the winter. Topics include: (1) surviving during winter, including concepts such as migration, hibernation, and skin color change; (2) changing behavior when spring comes; and (3) helping birds in winter. An activity identifying animal tracks is provided. (YP)

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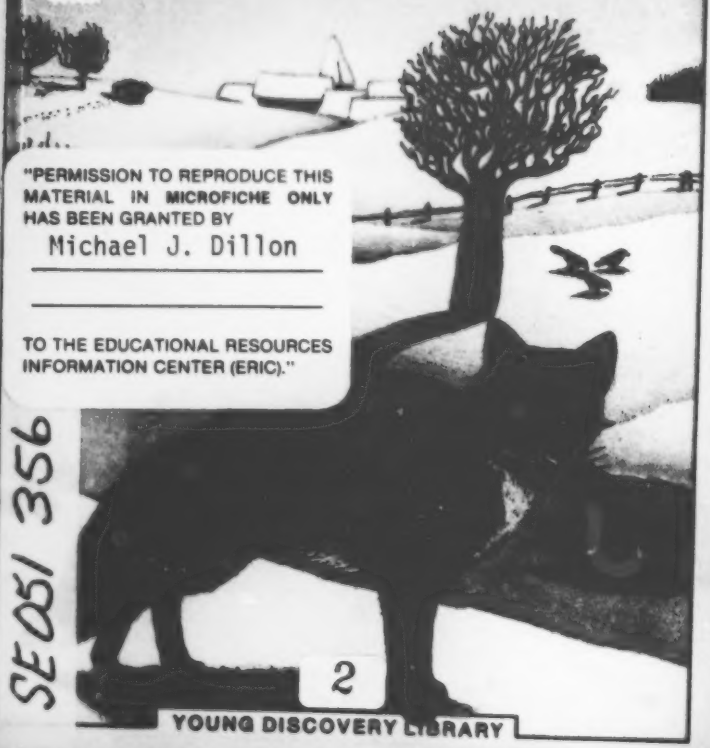
Animals in Winter



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YOUNG DISCOVERY LIBRARY

Library of Congress Cataloging-in-Publication Data

Sairigné, Catherine de.
Animals in winter.
Illustrated by Agnes Mathieu.
Translation of: Comment vivent les animaux en hiver.
Includes index.
Summary: A simple introduction to the habits of a variety of animals, including birds, bats, bears, and frogs, during the winter.
1. Animals — Wintering — Juvenile literature. [1. Animals — Habits and behavior. 2. Hibernation.] I. Mathieu, Agnes, ill. II. Title. III. Series: Young Discovery Library (Series); 5
QL753.S2513 1988 596'.054'3—dc19 87-34086
ISBN 0-944589-05-7

CHILDRENS PRESS CHOICE
A Young Discovery Library title selected for educational distribution
ISBN 0-516-08267-1

Written by Catherine de Sairigné
Illustrated by Agnes Mathieu

Specialist Adviser:
Dr. Donald Bruning
New York Zoological Society

ISBN 0-944589-05-7
First U.S. Publication 1988 by
Young Discovery Library
217 Main St. • Ossining, NY 10562

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Translated by Sarah Matthews
English text © 1986 by Moonlight Publishing Ltd.
Thanks to Aileen Buhl

Animals in Winter

Winter is coming...

Can you feel how much colder it is?

The days are growing shorter. The last few flowers are fading. Soon it may snow.

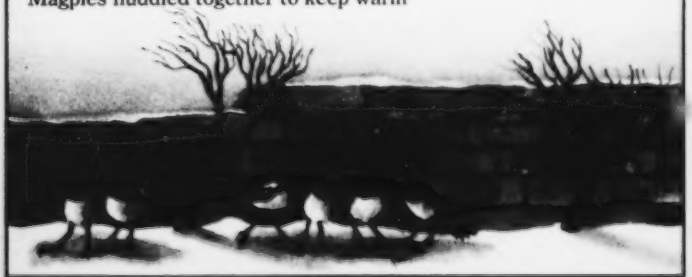
A fox with its winter coat

What will become of the animals out in the countryside?

Each animal has its own way of protecting itself from the cold. Look at a cat. Its fur is longer and thicker than in summer. All mammals grow longer hair in winter — they have a winter coat. Birds fluff their feathers out to trap warm air close to their bodies.

Goldfinch with its feathers fluffed out

Magpies huddled together to keep warm



Some birds fly off to warmer countries: they migrate. The ones that fly by day guide themselves by the sun. Others, flying by night, use the stars to guide themselves. Sometimes they travel for two or three months, with stops along the way. Some fly right across the sea. Some birds fly down from northern Europe and spend the winter in Italy, France or Spain. It's not only birds that fly south — some butterflies, like the painted lady, do as well.

Painted lady

In the mountains, antelope, ibex and sheep move down towards the sheltered walleys.

Cuckoos (1), storks (2), starlings (3) and swallows (4) fly off to Africa. Blackbirds (5) don't travel far.

1
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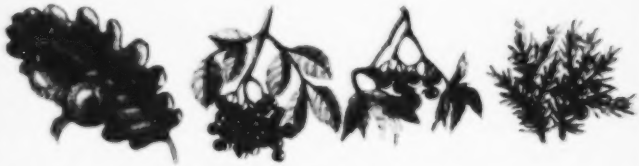
What about the animals that stay? They eat greedily and get fatter and fatter. The fat inside their bodies will protect them from the cold in the days to come. They eat acorns, elderberries, wild roses, juniper berries...



Some animals store food so that they don't run out during the winter. The field mouse (1) stores grain. Moles tuck worms away in special larders in their tunnels. They bite the worms' heads off so that they can't crawl away, but still stay alive and fresh until the mole comes back to eat them. (Sometimes the mole forgets where he's put them, and in time the worms grow new heads and slip away...) Squirrels (2) bury stores of nuts.

Squirrels eat pine cones by pulling off the scales and nibbling at the soft, sweet ends and eating the seeds underneath until nothing is left but the core.

Sleeping beauties

Some mammals, *such as woodchucks*, porcupines (1), dormice (2), hazel mice (3), hamsters (4), and bats, spend the winter peacefully. They go to sleep at the end of the autumn and wake in the spring. Sleeping very deeply all winter through is called **hibernation.** Before the animals go to sleep, they stuff themselves with grain and berries. Porcupines eat grubs and earthworms. Bats eat insects. As they eat, they get fatter, with a special kind of fat which their bodies use up slowly over the winter. This fat gives off heat as it breaks down, keeping the animals warm. They can live for several months without eating anything.

Bats

The woodchuck eats so much that in the end its stomach touches the ground when it walks.

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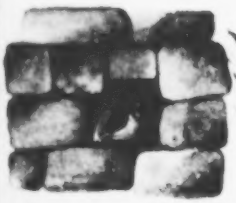
Where to hibernate?

Hibernating animals make nests of moss, grass and leaves. Dormice sleep in the hollows of tree trunks, or in the insulation material in your roof. Bats hang upside down in dark, quiet places — barns, belfries, caves.



Dormouse in a crack in a wall

Dormouse nest in a hedge

Porcupine, snuggled down in some moss

Sleepytime

As the days grow shorter, the weather grows colder. Every day the small animals sleep for a little longer. Their bodies grow cooler, until they are at the same temperature as their nests. Finally they fall into a deep sleep which lasts all winter long: they are hibernating.

How does hibernation work?
By lowering the body's heat. The cooler the body, the less energy it uses. In summer, a woodchuck's body temperature is about 86°F, in winter, about 50°F. Yours is about 98.6°F all year around.

Life slows down.
Rolled up into a ball, snug inside its nest, the American woodchuck hardly breathes, its heart beats more slowly, it gets thinner and thinner. Sometimes, if it gets too cold, it will wake up and move about to get warm, and then go back to sleep again, worn out. You must never wake up a hibernating animal.

A hibernating woodchuck only breathes 12 times an hour!

A woodchuck family in its burrow: the earth and stone blocking the entrance will keep out the cold.

E7

13
17

How do bears spend the winter? After their autumn feast, bears eat bundles of ferns so that their stomachs feel nice and full and they won't get hungry. Then they go to sleep in their dens. But, though they are sleeping, they are not hibernating. Their body heat doesn't change.

Two bear cubs are born in the dead of winter. They are no bigger than tiny puppies. Their mother dozes on, hardly waking even to nurse them.

What about badgers? Badgers sleep even more lightly than bears, though they spend as much time as they can snoozing away, snuggled down in their warm dens. They have to get up and go outside to defecate, though, as they are very clean animals, and never soil their dens.

Badgers are cautious, and only leave their dens at night.

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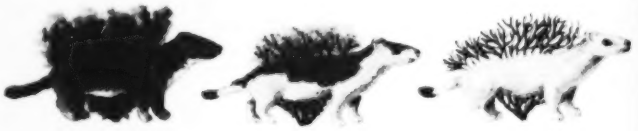
Animals that stay awake and outdoors have a hard time finding food. Prey is rare and hidden away. The ground is frozen hard, and covered in snow. A marten (1) may cover fifteen miles when out hunting!

A weasel may be small, but it can attack animals far bigger than itself. Here it is running down a rabbit.

Animals as white as snow.
Ermines, arctic foxes, arctic hares, ptarmigans, are not white all year long. In summer their fur or feathers are brown. This helps them hide among the rocks and trees. In the winter, though, all these animals turn white.



Only the tip of the ermine's tail stays black.

In the white landscape they can move about unseen, whether they are hunting, or being hunted.

Ptarmigan's summer feathers.

Ptarmigan's winter feathers. At night it digs out a little shelter for itself in the snow.

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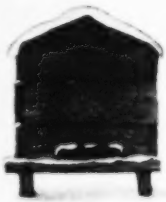
Why are there so few insects about in winter?

A lot of insects die at the end of the summer. Before they die, they have laid eggs which wait for the warm weather before they begin to develop.

Beetle larvae pass the winter underground, where they eat roots. Some insects hide: ants stay sheltered in their nest. Ladybugs snuggle down under dead leaves. Sulphur butterflies hang from twigs. In very cold, frosty weather their wings grow brittle as glass. Be careful not to touch them.

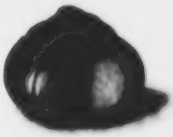


Bees stay quietly in their hives, feeding off the golden honey they gathered during the summer.

All the bumblebees except the queen die off. The queens, heavy with eggs, shelter underground, waiting for spring.

Colorado beetles bury themselves underground.

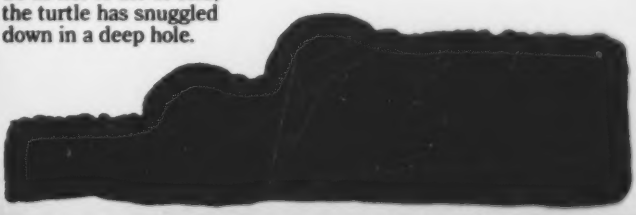
What happens to frogs, lizards, snakes, slugs, and snails?



Their bodies cool down, their muscles stiffen. They can't move and hardly breathe.

The green frog has left the edge of the pond, and has hidden itself down in the mud, where it hibernates through the winter. The snail stays snug in its shell. The opening is blocked with hardened slime. Snakes curl up in a group, sometimes several hundred of them together, to keep warm, underneath stones. When the weather warms up, all these animals will gradually wake up and start finding something to eat.

So as not to die of cold, the turtle has snuggled down in a deep hole.

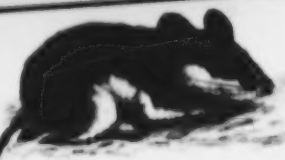


Swans turn around and around to stop the water from freezing over.

How do fish live underneath the ice?

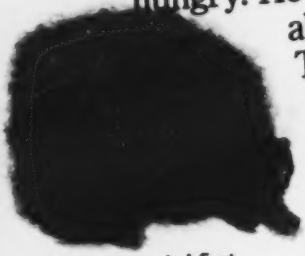
Although the surface freezes, below the ice the water stays at 39°F, just warm enough to keep the fish alive. They get very sluggish, though. Even the fierce pike only manages a flick of the tail, while the shivering carp burrows down into the mud at the bottom. Up above, birds fish through a hole in the ice.

A muskrat's nest. It is covered with plants to stay warm and cozy.



The dormouse leaves its nest.

Spring has come at last.
The sun's rays warm the air, and soon reach right down into the burrows. The animals which have been asleep or hibernating wake up. The bear is much thinner now, and very hungry. He quickly sets about finding food. The woodchuck stretches, its heart beats faster, its body grows warmer. It has lost about half its body weight. It tidies its burrow before leaving to find some fresh grass to eat.



The bear cubs' first step outside the cave.

The migrating birds return.
The birds that flew south, like the cuckoo, the swallow and the purple martin, come back. Often they find their way back to the very same tree or house where they made their nests the year before.

Sulphur butterflies are amongst the first insects to fly in the spring air.

Then bees, wasps, bumblebees begin to buzz about and gather nectar from the spring flowers. If you go out into the country, notice how the early caterpillars and aphids are gorging themselves on the young plants, and hear how the birds are singing.

N3

Spring is the time for birth. Everywhere new life is being brought out into the warm spring air. Look at the wild sow's stripy piglets. They are usually born about March or April. Fawns, baby deer, are born later in the year, about May or June. They stay with their mother to drink her milk until they learn how to feed themselves. Birds are busy building their nests and finding food for their hungry nestlings.

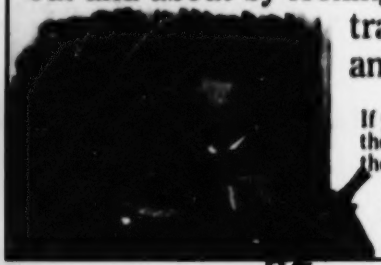
How can you help the birds in winter?

Give them something to eat. Mix up some grain and seed with a bit of butter.

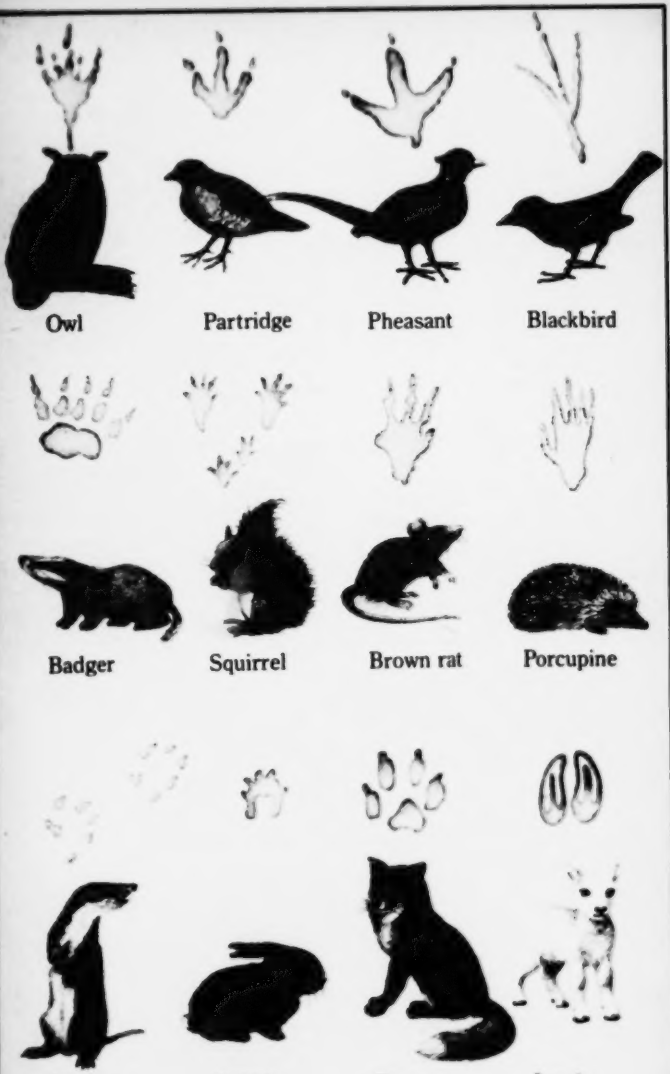
Put some peanuts in a net and hang it up. Pour some water into a saucer and put it onto the windowsill. Keep an eye on it to make sure it doesn't freeze over. If it does, replace it with fresh water. Once you start helping the birds, be sure to keep it up all winter long, It is worse to start and stop than not to do anything.

Animal tracks

You can see which animals have been out and about by looking at their tracks in the mud and snow.



If you sit quietly at the window, you can watch the birds come and eat the food you put out for them.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Pheasant
Blackbird
Badger
Squirrel
Brown rat
Porcupine
Weasel
Rabbit
Fox
Lamb

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As Soon As It's Fall

Rabbits and foxes
as soon as it's fall
get coats that are warm
with no trouble at all,
coats that are furry
and woolly and new,
heavy and thick
so the cold can't get through.

They don't have to buy them
or dye them or try them,
they don't have to knit them
or weave them or fit them,
they don't have to sew them
or stitch them all through,
They just have to *grow* them,
and that's what they do.

Aileen Fisher

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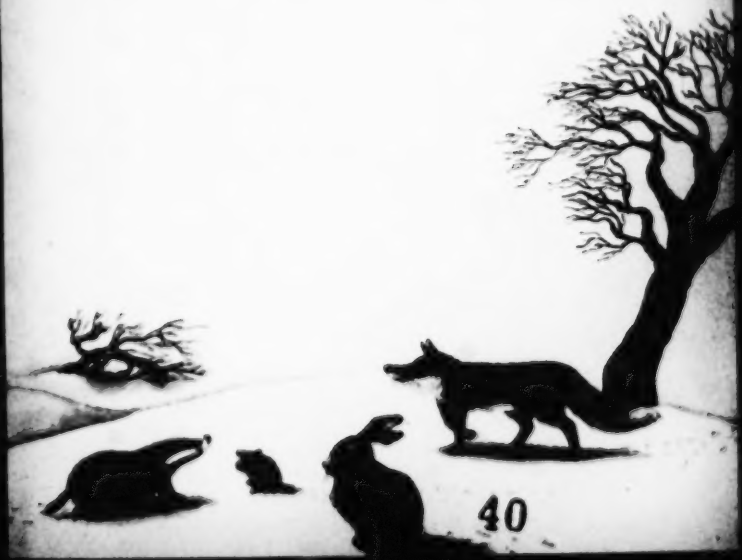

Animals in Winter
illustrated by Agnes Mathieu

- How do animals cope with the cold?
- Do all birds fly south in the winter?
- How do hibernating animals make themselves snug?

- Why do weasels turn white?
- Are any baby animals born in winter?
- What happens to fish when their ponds freeze over?

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ISBN 0-514-08257-1